

Customer No.: 31561
Application No.: 10/064,524
Docket No.: 7359-US-PA

Claim Amendment

1. (currently amended) A mass production encapsulation equipment for organic light emitting display devices, comprising:

a panel supply system, to supply an organic light emitting display panel to the mass production encapsulation equipment;

at least one dispensing system, to coat a resin on the panel;

a turning/storage system, to turn the panel and to store the panel after it is coated with the resin;

a cover plate supply system, to supply a cover plate to the mass production encapsulation ~~system~~ equipment, wherein the cover plate can be optionally ~~coated~~ coated with the resin;

a lamination/ultra-violet radiation system, to laminate the panel and the cover plate after they are aligned, and having a first ultra-violet radiation system to perform a first stage exposure;

a second ultra-violet radiation system, to perform a second stage exposure to cure the resin;

a transporting system, to transport the panel between the panel supply system, at least one dispensing system, the turning/storage system, the lamination/ultra-violet radiation system, second ultra-violet radiation system, and to transport the cover plate between the cover plate supply system, the lamination/ultra-violet radiation system, second ultra-violet radiation system; and

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an atmosphere control system, to control moisture level and oxygen level of the mass production encapsulation equipment.

2. (original) The mass production encapsulation equipment according to claim 1, wherein the panel supply system is also used as a product removal system.

3. (original) The mass production encapsulation equipment according to claim 1, wherein the turning/storage system stores at least one panel at a time to allow at least one dispensing system to dispense on other panels continuously.

4. (original) The mass production encapsulation equipment according to claim 1, wherein the dispensing system comprises at least one syringe.

5. (currently amended) The mass production encapsulation equipment according to claim ~~5~~4, wherein at least one dispensing system further comprises a laser distance measuring apparatus to measure a working distance between at least one syringe and the panel.

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6. (original) The mass production encapsulation equipment according to claim 4, wherein at least one dispensing system further comprises a contact-type distance detector to measure a working distance between at least one syringe and the panel.

7. (original) The mass production encapsulation equipment according to claim 4, wherein at least one syringe is controlled by a program to precisely position for various dispensing patterns.

8. (original) The mass production encapsulation equipment according to claim 1, wherein the transporting equipment comprises a conveyance belt or a mechanical arm.

9. (currently amended) A mass production encapsulation equipment for organic light emitting display devices, comprising:

a cover plate supply system, to supply a cover plate to the mass production encapsulation equipment;

at least one dispensing system, to coat a resin on the ~~panel~~ cover plate;

a turning/storage system, to store the cover plate after it is coated with the resin;

a panel supply system, to supply a ~~cover plate~~ panel to the mass production encapsulation ~~system~~ equipment, wherein the cover plate can be optionally coated with the resin;

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a lamination/ultra-violet radiation system, to laminate the panel and the cover plate after they are aligned, and having a first ultra-violet radiation system to perform a first stage exposure;

a second ultra-violet radiation system, to perform a second stage exposure to cure the resin;

a transporting system, to transport the cover plate between the cover plate supply system, at least one dispensing system, the turning/storage system, the lamination/ultra-violet radiation system, and the second ultra-violet radiation system, and to transport the panel between the panel supply system, the lamination/ultra-violet radiation system, and the second ultra-violet radiation system; and

an atmosphere control system, to control moisture level and oxygen level of the mass production encapsulation equipment.

10. (original) The mass production encapsulation equipment according to claim 9, wherein the panel supply system is also used as a product removal system.

11. (original) The mass production encapsulation equipment according to claim 9, wherein the turning/storage system stores at least one cover plate at a time to allow the at least one dispensing system to dispense other cover plates continuously.

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12. (original) The mass production encapsulation equipment according to claim 9, wherein the dispensing system comprises at least one syringe.

13. (original) The mass production encapsulation equipment according to claim 12, wherein at least one dispensing system further comprises a laser distance measuring apparatus to measure a working distance between at least one syringe and the panel.

14. (original) The mass production encapsulation equipment according to claim 12, wherein at least one dispensing system further comprises a contact-type distance detector to measure a working distance between at least one syringe and the panel.

15. (currently amended) The mass production encapsulation equipment according to claim 12, wherein the at least one syringe is controlled by a program to precisely position ~~them~~ the at least one syringe for various dispensing patterns.

16. (original) The mass production encapsulation equipment according to claim 9, wherein the transporting equipment comprises a conveyance belt or a mechanical arm.

17. (currently amended) A mass production encapsulation method for organic light emitting display devices, comprising:

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providing a panel supply system to supply at least a panel into a transporting system;
transporting the panel into a turning/storage system for turning over via the transporting system;
alternately transporting the panel into ~~the~~a first dispensing system and ~~the~~a second dispensing system for coating a resin on the panel;
transporting the panel coated with the resin by the first and the second dispensing systems into the turning/storage system for storage;
transporting the panel into a lamination/ultra-violet radiation system by the transporting system;
transporting a cover plate into the lamination/ultra-violet radiation system by the transporting system, wherein the cover plate is optionally also coated with the resin;
performing lamination of the cover plate and the panel and performing ~~the~~a first stage exposure by an ultra-violet light; and
transporting the panel laminated with the cover plate to an ultra-violet radiation system to perform ~~the~~a second stage exposure.

18. (original) The mass production encapsulation method according to claim 17, wherein the cover plate is selected from a group consisting of glass, plastic, acrylic, polymer and metal.

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19. (original) The mass production encapsulation method according to claim 17, wherein the transporting system comprises a conveyance belt or a mechanical arm.

20. (original) The mass production encapsulation method according to claim 17, wherein the step of coating the resin on the panel using the first and second dispensing systems comprises:
allocating at least one syringe for each in the first and the second dispensing systems; and
fixing the panel, and moving the at least one syringe along X, Y and Z directions for coating the resin.

21. (original) The mass production encapsulation method according to claim 17, wherein the resin comprises an ultra-violet curing resin or a thermal curing resin.

22. (original) The mass production encapsulation method according to claim 17, wherein the panel and the cover plate are aligned with each other for lamination using a mechanical alignment or a charge-coupled device.

23. (original) The mass production encapsulation method according to claim 17, wherein the step of lamination includes using a mechanical pressure, a gas pressure or a hydraulic pressure.

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24. (original) The mass production encapsulation method according to claim 17, wherein the turning/storage system stores at least one panel to allow the first and second dispensing systems to dispense on other panels continuously.

25. (currently amended) A mass production encapsulation method for organic light emitting display devices, comprising:

providing a cover plate supply system to supply at least a cover plate into a transporting system;

alternately transporting the cover plate into a first dispensing system and a second dispensing system for coating a resin thereon;

transporting the cover plate coated with the resin by the first and the second dispensing systems into ~~the~~ a turning/storage system for storage;

transporting the cover plate into a lamination/ultra-violet radiation system by the transporting system;

transporting a panel into the lamination/ultra-violet radiation system by the transporting system;

performing lamination of the cover plate and the panel and performing ~~the~~ a first stage exposure by an ultra-violet light; and

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transporting the panel laminated with the cover plate to an ultra-violet radiation system to perform ~~the~~ a second stage exposure.

26. (original) The mass production encapsulation method according to claim 25, wherein the cover plate is selected from ~~a~~ a group consisting of glass, plastic, acrylic, polymer and metal.

27. (original) The mass production encapsulation method according to claim 25, wherein the transporting system comprises a conveyance belt or a mechanical arm.

28. (original) The mass production encapsulation method according to claim 25, wherein the step of coating the resin on the cover plate using the first and second dispensing systems comprises:

allocating at least one syringe for each in the first and the second dispensing systems; and
fixing the cover plate, and moving the syringes along X, Y and Z directions for coating the resin.

29. (original) The mass production encapsulation method according to claim 25, wherein the resin comprises an ultra-violet curing resin or a thermal curing resin.

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30. (original) The mass production encapsulation method according to claim 25, wherein the panel and the cover plate are aligned with each other for lamination using a mechanical alignment or a charge-coupled device.

31. (original) The mass production encapsulation method according to claim 25, wherein the step of lamination includes using a mechanical pressure, a gas pressure or a hydraulic pressure.